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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PATEL, TAYAN B	
ART UNIT	**PAPER NUMBER**
1709	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/09/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/823,765	TOCHIKUBO, SHIGEO	
	Examiner	Art Unit	
	Tayan B. Patel	1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *14 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:

a. On page 38 line 1, "the" should be omitted from "the both porous water-purifying members" for grammatical purposes.

b. On page 38 line 23, "cylindrical shape" should be amended to "cylindrically shaped" for verb agreement purposes.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 7, and 16-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 7, applicant is vague in pointing out which porous-water purifying member's base material is activated carbon because applicant further limited independent claim 1 into at least 2 porous-water purifying members. Applicant must clearly recite if either or both porous-water purifying members require a base material of activated carbon.

Claim 16-18 recites the limitation "a first feeder terminal" in lines 2-3, respectively in each claim. In addition, Claim 16-18 also recites the limitation "a second feeder terminal" in lines 5-6, respectively in each claim. Since claim 1 already has recited a first and second feeder terminal, it is unclear as to if claims 16-18 are reciting more feeder terminals (than those in claim 1) or if claims 16-18 intend to refer back to the first and second feeder terminals of claim 1. Claims 16-18 have been interpreted as referring back to the first and second feeder terminals of claim 1 for purposes of examination on its merits.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:.

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 5, 7, 9, 10, 11, 12, 14, and 15 of the present invention are rejected under 35 U.S.C. 102(b) as being anticipated by Andelman (US 5,192,432).

As to claim 1, Andelman discloses a container (34), water supplying portion (38), discharging portion (42), first and second porous water purifying members (16, 22), annular clearance (18), and first and second electrodes (28, 30) that are connected to first and second porous water purifying members. (See Column 6, lines 5-66). A water supplying room is disclosed in Figure 4.

As to claim 5, a "ring shape" is an inherent characteristic of an annular clearance. Because Andelman discloses that the first and second porous water purifying members (16, 22) are wound about a central plastic tubing (See Column 6, lines 7-10), the annular clearance between 16 and 22 would inherently have a ring shape. See also Figure 1.

As to claim 7, Andelman discloses that the porous water purifying members may comprise activated carbon. (See Column 2, lines 47-54).

As to claim 9, Andelman discloses a coaxial configuration of the outside and inside water-purifying members. See Column 2, lines 35-40. With regard to the cylindrical shape, Andelman discloses a column (34) that is cylindrically shaped. See Column 6, lines 48-49; See Also Figure 2. Andelman discloses annular clearance (18) formed by the outer surface of the first porous water-purifying member and the inner surface of the second porous water-purifying member. See Column 6, lines 5-66.

As to claim 10, Andelman discloses a center pipe with a plurality of holes (24). See Column 6, lines 8-10. Andelman discloses a passage from the center pipe (24) to the discharging portion (42) in Figure 4.

As to claim 11, Andelman disclose the following: "The flow-through capacitor of the invention may be employed in various designs provided that the solution can flow through or across the charged metal plates or layers. See Column 3, lines 40-45. Here, the direction of flow of the fluid through or across layers towards the center pipe (24) constitutes a centripetal direction of flow.

As to claim 12, Andelman discloses a clearance-maintaining element (12, 18). See Column 6, lines 14-20.

As to claim 14, Andelman discloses a valve element that may be connected to the discharging valve (60). See Column 7, lines 20-21.

As to claim 15, Andelman discloses a container (34) that is tubular by description. See Column 6, lines 54-69; See also Figure 2. Also, Andelman discloses tubular shaped porous water purifying members (16, 22). See Column 6, lines 28-32; See Also Figure 2. As to the water supplying clearance being connected through water supplying portion, Andelman implicitly discloses these features in light of Figure 2 in view of Figure 4.

Instant claims 1, 5, 7, 9, 10, 11, 12, 14, and 15 structurally read on the apparatus of Andelman.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.

2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 2, 3, 4,16-18 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Andelman (US 5,192,432) as applied to claim 1 above, and further in view of Kazi (US 20050034978 A1).

With respect to claim 2, Andelman discloses all of the structure as discussed with respect to claim 1 above, but fails to disclose a source of alternating current to charge the electrodes.

Kazi et al. discloses a cell stack that also uses electrodes to purify a solvent. In this reference, alternating current is suggested to be beneficial in removal of heavy metal contaminants and organic contaminants because of the continuous flow-through process. "Alternatively, instead of using direct current, alternating current may be used to remediate the two types of contaminants." See Page 4, paragraph 0038.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the alternating current in Kazi et al. in Andelman to achieve better purification.

Claim 3 continues to read on the device of Andelman as applied to claim 1 above, and further in view of Kazi since the manner of operating a device does not differentiate an apparatus claim from the prior art. A recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate

the claimed apparatus from a prior art apparatus if the prior art apparatus teaches all the structural limitations of the claim. See MPEP 2114.

With respect to claim 4, Modified Andelman discloses all of the structure as discussed in claim 1 and 2 above. Kazi et al. further discloses that alternating current components or direct current components may be used to charge the electrodes. See Page 4, paragraph 0038; See also Page 14, paragraph 0321.

With respect to claim 16, Modified Andelman discloses all of the structure as disclosed with respect to claim 1 and 2 above, wherein Andelman further discloses that feeder terminals (28 and 30) are electrically conductive. See Column 6, lines 55-60.

With respect to claim 17, Modified Andelman discloses all of the structure as discussed with respect to claim 1, 2 and 16 above. Andelman further discloses a coaxial configuration of the outside and inside water-purifying members. See Column 2, lines 35-40. Kazi et al. further discloses that electrolytic cells have porous electrodes (page 2, paragraph 0018) where some cells have porous electrodes as the anode whereas other electrodes are cathodes. See Page 4, paragraph 0038.

With respect to claim 18, Modified Andelman discloses all of the structure as discussed with respect to claim 1, 2 and 16 above. Andelman further discloses a coaxial configuration of the outside and inside water-purifying members. See Column 2, lines 35-40. Kazi et al. further discloses that electrolytic cells have porous electrodes (page 2, paragraph 0018) where some cells have porous electrodes as the anode whereas other electrodes are cathodes. See Page 4, paragraph 0038.

With respect to claim 21, Modified Andelman discloses all of the structure as discussed with respect to claim 1, 2 and 16 above. Modified Andelman fails to disclose that at least one of the feeder terminals pressure contacts a porous water-purifying member.

The CCPA has held that the particular placement of a contact in a conductivity-measuring device was held to be an obvious matter of design choice. In re Kuhle, 526 F.2d 553, 188 USP (CCPA 1975); See also MPEP 2144.04 VI 3. With respect to claim 20, one of the feeder terminals is designated to pressure contact the upper surface of a porous water-purifying member. Similar to In re Kuhle, the placement of the feeder terminals in the Andelman reference is a matter of design choice because does not materially affect the functionality of the invention. Moreover, one of ordinary skill in the art would have a reasonable expectation of success in changing. As such, the design choice in claim 21 of the disclosed invention is obvious in light of Andelman in view of Kazi et al.

With respect to clam Claim 22 and 23, Modified Andelman discloses all of the structure as discussed with respect to claim 1, 2 and 16 above. Andelman further discloses a column (34) that is cylindrically shaped. See Column 6, lines 48-49; See Also Figure 2. Modified Andelman fails to disclose that at least one of the feeder terminals spreads over in a circular or ring shape along a circumferential direction in the shaft end surfaces.

The Federal Circuit has held that held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device

and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984); See also MPEP 2144.04 IV A. With respect to claim 22 and 23, regardless of its shape, a feeder terminal would function the same as any other feeder terminal. It would have been obvious to one of ordinary skill in the art at the time of the invention to change the shape of a feeder terminal as is merely a design choice which one of ordinary skill would have a reasonable expectation of success in changing.

8. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andelman (US 5,192,432) as applied to claim 1 above, and further in view of Hill (US 6,998,031 B1)

With respect to claim 6, Andelman discloses all of the structure as discussed with respect to claim 1 above, but fails to disclose a specified width of the annular clearance.

Hill discloses an apparatus with two elongate tubular bodied electrodes for electrolytic reactions. Hill teaches that the annular clearance between the two elongate tubular bodied electrodes is 2 mm in order to allow for less voltage during the electrolytic process to lower electrical costs. See Column 1, lines 20-26; See also Column 3, lines 37-45.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a 2 mm annular clearance from Hill in Andelman in order to treat water to remove pollutants through an electrolytic reaction as well as to lower electrical costs. See Column 1, lines 20-26; See also Column 3, lines 37-65.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andelman (US 5,192, 432) in view of VanderBilt et al. (US 4,753,728).

With respect to claim 8, Andelman discloses all of the structure as discussed with respect to claim 1 above, but fails to disclose that the porous water-purifying members are formed from a permeable sintered block by sintering a formed body of activated carbon and a binding agent.

VanderBilt discloses a water filter that contains the following: See Column 1, lines 55-64. Vanderbilt teaches that sintered block of activated carbon and a binding agent is known in the art to provide better filtration of liquids. See Table II.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the sintered blocks of activated carbon and a binding agent of Vanderbilt as the filtration elements in Andelman because of an improved flow rate of fluid through the filter. See Column 7, lines 25-65; See Also Table II.

10. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andelman (US 5, 192, 432) in view of Goodwin (US 5,277,802).

With respect to claim 13, Andelman discloses all of the structure as discussed with respect to claim 1 above, including tubular shaped porous water purifying members (16, 22) (See Column 6, lines 28-32) as well as a clearance-maintaining element (12 and 18). Andelman fails to disclose seal caps to close the shaft ends of the first and second porous water-purifying members.

Goodwin discloses a dual cartridge a filter system that comprises of two caps (180 and 182). See Column 12, lines 30-32; See also Figure 9. Goodwin suggests that

by including seal caps, the flow of fluid will be radial rather than around the porous water-purifying members. See Column 12, lines 40-45. As such, the filtered fluid may then exit through the discharging portion at a faster rate. Id.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the seal caps of Goodwin in the flow-through capacitor of Andelman in order to provide radial flow of fluid through the porous water-purifying members for increased filtration efficiency. See Column 12, lines 40-45.

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andelman (US 5,192, 432) view of Iwamoto (US 5,034,113).

With respect to claim 19, Andelman discloses all of the structure as discussed with respect to claim 1 above, including a coaxial configuration of the outside and inside water-purifying members. See Column 2, lines 35-40. Andelman fails to disclose at least one feeder terminal biting into the inside of at least one porous water-purifying member.

Iwamoto discloses an electrode assembly apparatus that improves flow of a fluid therein by impregnating a filter with an electrode. This reference teaches that the flow of fluid is improved because change in electrical potential decreases when the electrode impregnates the filter. See Column 2, lines 3-8.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the electrode impregnated inside the filter from Iwamoto and employ it in Andelman in order to improve the flow of fluid due to blockage by contaminants. See Column 2, line 5-33.

12. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Andelman (US 5,192,432) in view of Kazi (US 2005/0034978) as applied to claim 16 above, and further in view of Murphy Jr. et al. (US 4,606,891).

With respect to claim 20, modified Andelman discloses all of the structure as discussed with respect to claim 16 above, including first and second feeder terminals that are pressure contacted onto the first and second porous purifying members. See Figure 3. Modified Andelman fails to disclose an energizing member.

Murphy, Jr. et al. discloses an electrode holder useful in a corrosion-testing device. This reference is analogous to the prior cited references because it also discloses an electrode device that employs electrical contacts for conductivity. Murphy, Jr. et al. utilizes the energizing member (82) in order to provide extra support to the feeder terminals to increase the contact surface area. In turn, conductivity would increase. See Column 5, lines 7-42. See also figure 1.

It would have been obvious to one of ordinary skill at the time the invention was made to utilize energizing members in Murphy, Jr. et al. in modified Andelman for better conductivity through the electrodes.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Tochikubo et al. (US 6,986,843), filed on August 1, 2002, is relevant prior art because it is applicant's own invention. Tochikubo discloses all of the claimed features in the present invention pertaining to a water purifier and would render

the claimed invention obvious if combined with a reference that teaches the electrolytic components of the apparatus.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tayan B. Patel whose telephone number is 571-272-9806. The examiner can normally be reached on Monday-Thursday, 7:30-5:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Neckel D. Alexa can be reached on 571-272-9887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Tayan Patel TBP

Patent Examiner

Art Unit 1709

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